

IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-26 (canceled)

1 Claim 27 (currently amended): The telecommunications radio
2 system recited in claim [51]59 wherein the height of the
3 structure is in the range of 90m to 320m from the erection
4 ground and the base station is located on the structure at a
5 height in the range of 90m to 320m from the erection ground.

1 Claim 28 (previously presented): The telecommunications
2 radio system recited in claim 27 wherein each of said
3 sectors is served by a separate one of the antennas.

1 Claim 29 (previously presented): The telecommunications
2 radio system recited in claim 27 wherein at least one of the
3 antennas is a phase-controlled antenna.

1 Claim 30 (previously presented): The telecommunications
2 radio system recited in claim 29 wherein the multitude of
3 sectors comprises six sectors.

1 Claim 31 (previously presented): The telecommunications
2 radio system recited in claim 29 wherein the multitude of
3 sectors comprises 12 sectors.

1 Claim 32 (previously presented): The telecommunications
2 radio system recited in claim 29 wherein the multitude of
3 sectors comprises 24 sectors.

1 Claim 33 (previously presented): The telecommunications
2 radio system recited in claim 29 wherein the multitude of
3 sectors comprises 48 sectors.

Claim 34 (canceled)

1 Claim 35 (currently amended): The telecommunications radio
2 system recited in claim [52]59 in which the first plane is
3 the same as the second plane.

Claim 36 (canceled)

1 Claim 37 (previously presented): The telecommunications
2 radio system recited in claim 35 wherein at least one of the
3 antennas on the second ring has a horizontal angular range
4 that is smaller than a horizontal angular range of at least
5 one of the antennas on the first ring.

1 Claim 38 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein at least one of the
3 antennas on the first ring has a vertical aperture angle in
4 the range of 8 to 12 degrees.

1 Claim 39 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein the at least one
3 antenna on the second ring has a vertical aperture angle in
4 the range of 3 to 6.5 degrees.

1 Claim 40 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein the area is
3 subdivided into 24 sectors by the antennas on the first ring
4 and 72 sectors by the antennas on the second ring.

1 Claim 41 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein shape and/or size
3 of one or more of the sectors can be changed by switching on
4 or off one or more of the antennas.

1 Claim 42 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein the shape and/or
3 size of one or more of the sectors can be changed by
4 changing the horizontal angular range of one or more of the
5 antennas.

1 Claim 43 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein shape and/or size
3 of one or more of the sectors can be changed by changing the
4 vertical aperture angle of one or more of the antennas.

1 Claim 44 (previously presented): The telecommunications
2 radio system recited in claim 43 wherein at least one of the
3 antennas, not in either said first or second sets, is
4 arranged in a third plane orthogonal to the longitudinal
5 axis of the structure so as to cover an area in a proximity
6 zone of the structure, the third plane being located below a
7 height of 50m from the erection ground.

1 Claim 45 (previously presented): The telecommunications
2 radio system recited in claim 37 wherein a total number of
3 sectors needed to cover the area is a function of a size of
4 each of said sectors and a required field strength in said
5 each sector.

1 Claim 46 (previously presented): The telecommunications
2 radio system recited in claim 37 in which all of the
3 antennas operate at one frequency.

1 Claim 47 (previously presented): The telecommunications
2 radio system recited in claim 46 wherein a second base
3 station operating at a different frequency, from said one
4 frequency, is situated within the area.

Claims 48-58 (canceled)

1 Claim 59 (new): A telecommunications radio system for mobile
2 communication services comprising a first base station
3 having a plurality of antennas and located at a site, the
4 base station covering an area subdivided into a multitude of
5 sectors by the antennas, wherein:

6 the site comprises a structure with a height of at
7 least 50m from erection ground;

8 the base station is located on the structure at a
9 height of at least 50m from erection ground; and

10 the plurality of antennas having:

11 a first set of the antennas arranged in a first
12 ring situated in a first plane orthogonal to and concentric
13 with a longitudinal axis of the structure; and

14 a second set of the antennas arranged in a second
15 ring situated in a second plane orthogonal to and concentric
16 with the longitudinal axis of the structure, wherein the
17 antennas in the second set are different from and greater in
18 number than the antennas in the first set, such that the
19 second ring of antennas provides denser sectorization than
20 that provided by the first set of antennas; and

21 wherein the plurality of antennas results in a
22 substantially uniform power flow density of approximately
23 -21 dBm/square meter, in the area and at approximately
24 ground level for an approximate 10 W transmitting power per
25 sector.

1 Claim 60 (new): A base station for use in a
2 telecommunications radio system, the base station having a
3 plurality of antennas and located at a site, the base
4 station covering an area subdivided into a multitude of
5 sectors by the antennas, wherein:

6 the site comprises a structure with a height of at
7 least 50m from erection ground;

8 the base station is located on the structure at a
9 height of at least 50m from erection ground; and

10 the plurality of antennas having:

11 a first set of the antennas arranged in a first
12 ring situated in a first plane orthogonal to and concentric
13 with a longitudinal axis of the structure; and

14 a second set of the antennas arranged in a second
15 ring situated in a second plane orthogonal to and concentric
16 with the longitudinal axis of the structure, wherein the
17 antennas in the second set are different from and greater in
18 number than the antennas in the first set, such that the
19 second ring of antennas provides denser sectorization than
20 that provided by the first set of antennas; and

21 wherein the plurality of antennas results in a
22 substantially uniform power flow density of approximately
23 -21 dBm/square meter, in the area and at approximately
24 ground level for an approximate 10 W transmitting power per
25 sector.

1 Claim 61 (new): Apparatus for use in a base station in a
2 telecommunications radio system for mobile communication
3 services, the base station being located at a site, the base
4 station covering an area subdivided into a multitude of
5 sectors with the sectors being served by a plurality of
6 antennas, wherein:

7 the site comprises a structure with a height of at
8 least 50m from erection ground;

9 the base station has a plurality of antennas and is
10 located on the structure at a height of at least 50m from
11 erection ground; and

12 the apparatus comprising the plurality of antennas
13 having:

14 a first set of the antennas arranged in a first
15 ring situated in a first plane orthogonal to and concentric
16 with a longitudinal axis of the structure; and

17 a second set of the antennas arranged in a second
18 ring situated in a second plane orthogonal to and concentric
19 with the longitudinal axis of the structure, wherein the
20 antennas in the second set are different from and greater in
21 number than the antennas in the first set, such that the
22 second ring of antennas provides denser sectorization than
23 that provided by the first set of antennas; and

24 wherein the plurality of antennas results in a
25 substantially uniform power flow density of approximately
26 -21 dBm/square meter, in the area and at approximately
27 ground level for an approximate 10 W transmitting power per
28 sector.

1 Claim 62 (new): A mobile network comprising a
2 telecommunications radio system for mobile communication
3 services, the system having at least one base station, the

4 base station having a plurality of antennas, the base
5 station being located at a site and covering an area
6 subdivided into a multitude of sectors by the antennas,
7 wherein:

8 the site comprises a structure having a height of at
9 least 50m from erection ground;

10 the base station is located on the structure at a
11 height of at least 50m from the erection ground; and

12 the plurality of antennas having:

13 a first set of the antennas arranged in a first
14 ring situated in a first plane orthogonal to and concentric
15 with a longitudinal axis of the structure; and

16 a second set of the antennas arranged in a second
17 ring situated in a second plane orthogonal to and concentric
18 with the longitudinal axis of the structure, wherein the
19 antennas in the second set are different from and greater in
20 number than the antennas in the first set, such that the
21 second ring of antennas provides denser sectorization than
22 that provided by the first set of antennas; and

23 wherein the plurality of antennas results in a
24 substantially uniform power flow density of approximately
25 -21 dBm/square meter, in the area and at approximately
26 ground level for an approximate 10 W transmitting power per
27 sector.